

Appendix B

Description of Selected Health Professions in Texas

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Health Profession	Description of Profession	Job Outlook	Length of Training and Requirements	Salary Range
ALLIED HEALTH: Gerontologist	Gerontologists specialize in working with elderly persons. They may have a degree in gerontology or may be trained in nursing, sociology, psychology, or other human service-related professions. A gerontologist may work within existing professions or in new, emerging nontraditional fields.	Because of the increasing proportion of senior citizens in the United States, the job outlook for individuals working in gerontology is excellent.	Gerontology is a multidisciplinary career that draws from a variety of fields. The length of training required varies from field to field. Many colleges and universities offer associate, bachelor's, and master's programs in gerontology. Some schools offer research programs at the doctoral and postdoctoral levels. Currently, no accreditation or registration is required.	Unavailable
ALLIED HEALTH: Occupational Therapist	Occupational therapists provide services to individuals whose ability to cope with the activities of daily living are impaired by physical illness or injury, congenital or developmental disability, or the aging process. The goal of the therapist is to help their patients regain their independence and good health. Therapists use several types of activities to evaluate and treat patients. With children, they may use toys and games. In treating adults, the therapists may use computers, work simulation, leisure activities, self-care tasks, and other methods. Adaptive equipment such as wheelchairs, splints, and eating and dressing aids are provided by the therapist when needed. The effectiveness of the activity and progress of the patient are carefully monitored and recorded by occupational therapists.	Occupational therapy is one of the fastest growing health professions in the nation. The job market is expected to increase dramatically through the end of the 1990s and into the next century. Community settings and geographic areas that are underserved by occupational therapists offer the greatest job opportunities.	Three routes are offered: a bachelor's degree, a post-baccalaureate certificate program, or a professional master's degree program. All OT education programs include a period of supervised clinical experience.	\$32,000 to \$40,000
ALLIED HEALTH: Occupational Therapy Assistant/Aide	The occupational therapy assistant/ aide works with the occupational therapist to treat the patient who has a disability resulting from physical injury or trauma, disease, aging, mental illness, or alcohol/substance abuse. They may assist the patient with exercises, work with artificial limbs, provide therapeutic massage, or perform any other activities directed by the occupational therapist.	The job outlook for occupational therapy assistants is excellent. There are not enough certified personnel to meet the current demand. More jobs are expected to be created by new rehabilitation centers, schools, and work sites.	To become an occupational therapy assistant, you must complete either a two-year associate degree or one of a limited number of certificate programs. These programs also include supervised clinical experience.	\$25,000 to \$30,000.
ALLIED HEALTH: Physical Therapist	Physical therapists work with patients who have lost certain physical abilities through injury or illness to relieve their pain, help them regain physical strength, help them recover the use of an affected limb, or relearn how to perform the activities of daily living. They confer with the patient's physician prior to initiating treatment and evaluation. Evaluating a patient's physical ability through testing, which includes range-of-motion tests, manual-muscle tests, gait and functional analysis, and other diagnostic tools, helps the therapist establish a program for the patient, teach the patient the techniques they need to use, and monitor their progress. Physical therapists work in rehabilitation, community health, industry, sports, research, education, and administration. They also perform patient evaluations.	According to the March 1995 issue of Money, physical therapy is the third-fastest growing career in the nation. The demand for physical therapists far exceeds the available supply. An aging population, the general population's growing participation in sports and fitness activities, and technology and medical advances are contributing to the increased need for physical therapists. In Texas, the limited number of accredited programs also contributes to the shortage of these professionals.	The American Board of Physical Therapy Specialties certifies qualified physical therapists in seven areas of specialty (cardiopulmonary, clinical electrophysiology, neurology, orthopedics, pediatrics, geriatrics, and sports physical therapy). Certified specialists are denoted by the letters CS, which appear after their area of specialty. In Texas, physical therapists must receive a four-year bachelor's degree from an accredited university and then enroll in a master's-level program.	\$35,000 to \$40,000

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ALLIED HEALTH: Physical Therapy Assistant/Aide	Physical therapy assistants implement treatment programs for patients under the supervision of a physical therapist. Their duties may include training patients in exercises, helping them relearn the daily living skills, using special equipment and prostheses, reporting patients' progress to the physical therapist, and other treatment procedures.	As with physical therapists, physical therapy assistants are in high demand and will continue to be so into the next century.	Physical therapy assistants must complete a two-year accredited program offered at community colleges and universities. The course of study for a physical therapy assistant differs greatly from that of a physical therapist. The curriculum includes one year of general study and one year of technical courses that focus on physical therapy procedures and clinical experience. Upon completion, graduates receive an associate degree.	\$24,000 to \$28,000
ALLIED HEALTH: Recreational Therapist	Recreational therapists, also known as therapeutic recreational specialists, use medically approved recreational programs to physically and socially rehabilitate patients who have chronic physical, psychological, and social handicaps. Activities may include sports, games, dance, drama, arts and crafts, music, and field trips. The recreational therapist encourages patients to develop interests and skills to assist them in recovering from and coping with illness or disability. They may also treat individuals with specific medical problems in these environments.	The U.S. Department of Labor Statistics predicts that the field will grow by 40 percent through the year 2005 because of the increasing need for long-term care, rehabilitation, and services for the developmentally disabled.	Individuals who wish to be considered for jobs in clinical settings, such as hospitals or community mental health facilities, must obtain a degree in therapeutic recreation. They also require a minimum of 360 hours of internship under the supervision of a certified therapeutic recreational specialist.	\$31,472
ALLIED HEALTH: Respiratory Care Technician/Therapist	Respiratory care therapists and respiratory care technicians, referred to as respiratory care practitioners (RCPs), treat patients who have difficulties with breathing because of cardiopulmonary (heart-lung) problems. They conduct diagnostic tests of patients' cardiopulmonary functions and give patients appropriate treatment, as ordered by a physician.	The field of respiratory care is growing rapidly. This career is expected to grow 36 percent by the year 2005 because of the growing middle-aged and elderly population.	Training for respiratory care technicians ranges from 12 to 18 months, respiratory care therapists require a two-year associate degree or a four-year bachelor's degree.	2b
ALLIED HEALTH: Speech/ Language Pathologist and Audiologist	Speech/language pathologists are health care professionals educated and trained to evaluate and treat children and adults with speech, language, and swallowing problems. They help children and adolescents with language disorders to understand and give directions, convey ideas, and improve language skills that lead to better academic performance. They also evaluate and treat persons with swallowing disorders that may result from illness, surgery, stroke, or injury. Audiologists specialize in the diagnosis, prevention, and treatment of patients, ranging from infants to the elderly, who suffer from hearing, central auditory processing, and balance disorders.	By the year 2005, the demand for speech/language pathologists and audiologists is expected to grow at a rapid rate of 46 percent nationwide, increasing the new job openings by almost 40,000. In Texas, it is estimated that the growth will be 30 percent for these occupations.	The minimum requirement is a master's degree.	\$38,500 to \$41,500
CHIROPRACTIC CARE: Chiropractor	Chiropractors, or doctors of chiropractic (D.C.), are concerned with the proper function of the nervous system as it relates to the body as a whole. This approach to health care stresses the patient's overall health and well-being. Chiropractors use natural, nonsurgical health treatments such as heat, ultrasound, massage, light, diet, water, exercise, and rest. Postural and spinal analysis, involving correct alignment of the vertebrae, is unique to chiropractic. Chiropractors are not permitted to prescribe drugs or use surgery to treat their patients. Chiropractors may take diagnostic x-rays as a part of their treatment methods, but Texas law prohibits their use of x-ray or radium therapy.	Texas employment is estimated at 3,600 jobs by the year 2000. There are approximately 200 additional job openings in Texas each year.	To become a licensed chiropractor in Texas, an applicant must graduate from a college that is accredited by the Council on Chiropractic Education (CCE). The educational requirements call for a minimum of two years of college-level study in an accredited institution of higher learning and graduation from a four-year college of chiropractic that meets the standards of professional education. Before graduating, a chiropractic student must also complete a program in clinical experience.	\$30,000 to \$40,400

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CLINICAL LAB SCIENCE: Cytotechnologist	Cytotechnologists are specially trained medical technologists who prepare and evaluate cell samples from gynecologic and nongynecologic sources. They examine the cells microscopically for color, size, shape, structure, and patterns. Abnormal changes in the cells may indicate cancer, hormonal problems, or other pathologic processes. Pathologists use the information supplied by cytotechnologists to make a final diagnosis. Cytotechnologists work with a variety of laboratory techniques and instruments, including special stains and the light microscope. Their job responsibilities are increasing with the advancement of new tumor identification techniques.	The increased use of cytologic testing to confirm disease and the shortage of trained cytotechnologists have created a growing demand for cytotechnologists. The job market for these professionals is excellent, with opportunities available in rural and urban settings.	Entry-level positions usually require a bachelor's degree plus one year of special instruction in cytotechnology from a school that is accredited by the Committee on Allied Health Education and Accreditation. Those who wish to take the registry examination given by the American Society of Clinical Pathologists must first complete the requirements of an accredited program.	\$29,772
CLINICAL LAB SCIENCE: Histologic Technician/ Histotechnologist	Histologic technicians prepare slides of body tissue for microscopic examination by freezing and cutting tissues, mounting them on slides, and staining them with special dyes to make the details visible under the microscope. Histotechnologists perform more complex tasks than histologic technicians, including procedures associated with histochemistry, electron microscopy, and immunofluorescence. Histotechnologists may function as section supervisors, teach students, and perform more complex analyses such as identifying tissue structure and cell components to be used in the diagnosis, prevention, or treatment of disease.	Employment opportunities are excellent. A shortage of histologic technicians and histotechnologists in Texas and throughout the nation has created a strong demand for these professionals.	To become a histologic technician, a high school graduate can enter either a 12-month, hospital-based on-the-job training program or a two-year associate degree program at a community college. A histotechnologist must have a bachelor's degree and one year of additional laboratory experience or have completed a histotechnology program accredited by the Committee on Allied Health Education and Accreditation.	The average starting salary for histologic technicians is \$19,656 in Texas hospitals. Histotechnologists start at an average annual salary of \$24,333.
CLINICAL LAB SCIENCE: Medical Laboratory Technician	Medical laboratory technicians (MLTs) often work under the supervision of medical technologists to perform routine clinical laboratory tests on blood, tissue, and body fluids to help in the diagnosis and treatment of diseases. Technicians' duties include: collecting blood samples; preparing chemical solutions; preparing and analyzing specimens; enforcing quality control measures; maintaining equipment; keeping records of laboratory tests; and reporting results to medical technologists, head nurses, or physicians. Like medical technologists, technicians use laboratory instruments ranging from microscopes and computers to automatic analyzers in the areas of chemistry, hematology, urinalysis, blood banking, immuno-logy, and microbiology.	Texas employment in the year 2000 is estimated at 10,500 jobs, with 365 yearly job openings.	A two-year associate degree is required.	\$9.88 per hour
CLINICAL LAB SCIENCE: Medical Technologist	Medical technologists, also known as clinical laboratory scientists, analyze human blood, tissues, and body fluids and supervise the performance of thousands of medical laboratory tests. Medical technologists exercise independent judgment, correlate test results, and interpret the findings. Physicians depend on these professionals to produce reliable and valid results that may be used in determining the presence, extent, and possible cause of disease.	The rapidly growing older population will spur demand for medical technologists, since older people generally have more medical problems. However, advances in laboratory automation and more simplified tests will make it possible for fewer workers to perform more tests, thus slowing the growth in the field.	Bachelor's degree programs in medical technology require four years of college education, including one year of clinical laboratory education and experience in an accredited health facility.	\$11.70 per hour

Health Profession	Description of Profession	Job Outlook	Length of Training and Requirements	Salary Range
CLINICAL LAB SCIENCE: Blood Bank Technology Specialist	Specialists in blood bank technology perform and supervise routine and specialized tests in blood banks and blood collection centers. Their duties include: 1) identifying blood types and antibodies; 2) screening for transfusion-transmitted viruses; 3) investigating adverse responses to transfusion; 4) supervising the collection, separation, delivery, and storage of blood components; and 5) supporting physicians and nurses in blood transfusion therapy. The blood bank technology specialist's training enables him or her to perform specialized tests, such as those dealing with the study of blood and its immunities (immunohematology).	Employment opportunities in Texas are expected to be good through the year 2000 because of a growing elderly population. The job outlook for blood bank technology specialists is similar to that for medical technologists.	Acceptance into an accredited 12-month training program requires certification in medical technology by the Board of Registry of the American Society of Clinical Pathologists (ASCP) and a bachelor's degree from a regionally accredited college or university with a major in any of the biological or physical sciences. Most programs also require that applicants have one year of work experience in addition to the bachelor's degree. The blood bank technology curriculum includes theoretical concepts of blood bank immunohematology, laboratory management, and rotations in all technical areas of the modern blood bank and transfusion services.	\$12.50 to \$25.00 per hour.
DENTISTRY: Dental Hygienist	Dental hygienists are trained to evaluate a patient's dental health. Their duties include taking x-rays, cleaning patients' teeth, and applying fluorides and sealants to teeth. They may also apply temporary fillings at the request of the dentist. Dental hygienists are responsible for providing dental health education, including topics such as oral hygiene, selecting appropriate toothbrushes, the use of dental floss, and how diseases such as diabetes affect a patient's oral health.	The demand for dental hygienists will continue to increase as the population ages and new treatments and technologies become available for the treatment of dental hygiene problems.	Two years of college at an accredited school is necessary to become a dental hygienist. There are some university-based dental hygiene programs that offer bachelor's and master's degrees.	\$28,000
DENTISTRY: Dental Laboratory Technician	Dental technology is the art and science of making and repairing dental appliances such as dentures, dental crowns, bridges, implants, and braces. Dental laboratory technicians are similar to pharmacists in that they fill prescriptions from a dentist. Technicians use materials such as gold, silver, stainless steel, porcelain, and plastic to make the appliance as specified by the dentist's prescription.	The new technologies in prostheses for teeth have enabled the general population to keep their teeth longer. Employment opportunities for dental laboratory technicians will continue to rise into the next century as the population ages.	Dental laboratory technicians attend two-year accredited programs at a community college, vocational school, technical college, or a university program that has a dental school. Most students receive a certificate or an associate degree upon completion of the program.	\$25,000 to \$50,000
DENTISTRY: Dentist	A dentist has earned a degree as either a doctor of dental surgery (D.D.S.) or a doctor of dental medicine (D.D.M.). Dentists examine and treat diseases, injuries, and malformations of teeth, gums, and mouth. They can enhance the appearance of their patients through dental techniques such as braces, dentures, or dental surgery. Ninety percent of dentists are general practitioners and are usually self-employed. Dentists supervise the work of the dental health care team and have final responsibility for all dental services being provided.	The need for dentists and their services continues to grow. Successful preventive dentistry has resulted in a population that retains its teeth longer and therefore requires more dentists to continue its care. According to the Bureau of Labor Statistics, the field will experience a national growth rate of five percent through the year 2005.	Admission to dental schools requires a minimum of 90 semester hours of credit from an accredited college. Ninety-five percent of applicants have a bachelor's degree in a scientific field. Graduation from an accredited school of dentistry usually takes about four years. Specialization requires additional years of training.	\$53,000

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EMS: Emergency Medical Services Personnel	Emergency medical services personnel are the first to evaluate the nature and extent of a medical problem. They determine the number of people injured, types of injury present, degree of trauma, and any pre-existing medical conditions the victims may have-such as allergies, epilepsy, or diabetes-that require special medical attention. Then they stabilize and safely transport each victim to a health facility. Emergency medical services personnel must observe strict guidelines and work under the authority of a medical director.	Opportunities in this career continue to grow as emergency medical services personnel become integral team members in providing timely health care in emergencies.	A valid driver's license is also required to take emergency medical services personnel course work. Each level of emergency medical services personnel training requires passing the Basic Skills Proficiency test, which includes bandaging and splinting, mechanical aids to breathing, spinal immobilization, traction splinting, physical assessment of patient, and CPR. The curriculum also includes on-the-job training in clinics and ambulances.	Emergency dispatchers or emergency care attendants range from \$15,000 to \$20,000. More advanced EMTs range from \$25,000 to \$35,000.
MEDICAL: Physician	Physicians care for healthy people and for those who are ill or injured. They perform physical examinations and diagnose and treat illnesses, injuries, and other disorders. They prescribe and administer medications and treatments, provide immunization services, care for pregnant women and deliver babies, perform surgery, and conduct research to aid in disease control or the development of new treatments. Managed care and health maintenance organizations are creating an increased demand for primary care physicians who provide most health care needs for their patients and refer them to other specialists as needed. Primary care physicians may manage patient care and coordinate and direct the health care team.	The demand for physician services will continue to increase in the future, especially in rural areas where many physicians are nearing retirement age. Primary care physicians are increasingly in demand under current health care delivery systems.	Physicians must train for 11 or more years after high school before they are qualified to practice medicine. Individuals may apply for medical school after three years of college. Applicants also must take the Medical College Admission Test (MCAT). Since admission to medical school is highly competitive, with more applicants than there are class positions, interested students should have high grade-point averages and high MCAT scores. Individuals considering medicine should begin preparing in high school by taking a wide range of science, math, and liberal arts courses. Medical school consists of two years of basic medical science study (anatomy, biochemistry, microbiology, physiology, ethics, and law. During the last two years of medical school, students apply their classroom knowledge to the art of patient care. They rotate through medical specialties and may take electives in areas of special interest.	\$125,000
MEDICAL: Physician Assistant	Physician assistants (PAs) work directly under a doctor of medicine or osteopathy and perform a wide variety of health care services, which are regulated under state law. Their duties may include: taking medical histories, performing physical examinations, ordering laboratory tests and x-rays, assisting in surgery, applying casts and bandages, making tentative diagnoses, directing treatments, recommending medications, treating minor injuries, and giving pre- and postoperative care. PAs also provide patient education when appropriate.	Employment opportunities for physician assistants are excellent through the year 2000. An average of 200 to 300 openings is anticipated every year in Texas from 1996 to 2001.	Most physician assistant programs require applicants to have previous health care experience and some college education. Physician assistants are educated in programs lasting about 108 weeks. PA students are taught to diagnose and treat medical problems. Education consists of classroom and laboratory instruction in the basic medical and behavioral sciences followed by clinical rotations.	\$42,000 to \$59,000

Health Profession	Description of Profession	Job Outlook	Length of Training and Requirements	Salary Range
MENTAL HEALTH: Licensed Professional Counselor	Licensed professional counselors help people deal with problems or conflicts they are unable to solve alone, including substance abuse; family, parenting, and marriage conflicts; managing stress; depression; suicidal thoughts; career concerns; and problems with self-esteem. Mental health counselors collect information through interviews, observations, and tests, and then decide how best to treat patients. The counselor may work with individuals, couples, families, or in group sessions of people with similar problems. They work closely with other mental health professionals, such as psychiatrists, psychologists, and social workers, to care for patients.	Growth in this field is faster than average. These professionals may be in even greater demand if present trends such as high divorce rate, alcoholism, drug abuse, and child abuse continue.	The minimum education requirement is a master's degree of arts or sciences. A doctoral degree is rapidly becoming required in the field. After completing course requirements, individuals must complete an internship before graduating.	\$35,000 to \$48,900
MENTAL HEALTH: Marriage and Family Therapist	Marriage and family therapists address a wide array of relationship issues and diagnose and treat mental and nervous disorders and problems within families. These therapists deal with a wide variety of issues, including those that stem from couple relationships, children, stepfamilies, and caring for elderly parents. They also treat and help families cope with specific disorders such as substance abuse, eating disorders, prolonged underachieving, depression, and other mental and emotional problems. The marriage and family therapist consults with all those involved in the problem, including parents, spouses, children, friends, school personnel, social services, community agencies, and the courts.	The job outlook for this field is mixed. As more consumers, health professionals, and employers understand the skills, educational and training standards, and effectiveness of marriage and family therapy, the profession will gain clients.	A six-year, master's level degree is the minimum education required to enter this field. Doctoral education in family therapy emphasizes the training of supervisors, teachers, researchers, and clinicians in the discipline.	\$35,000 to \$53,300
MENTAL HEALTH: Psychologist	Psychologists study the behavior of people and animals in an effort to understand, compare, and explain the ways they act and respond. They collect and apply knowledge related to the mental, emotional, and behavioral characteristics of individuals and groups.	Employment opportunities for psychologists in Texas are estimated to increase by 16 percent annually.	Training for a psychologist varies from a four-year, bachelor's degree to an eight-year, doctoral degree.	\$18,000 to \$75,000
MENTAL HEALTH: Social Worker	Social workers assist individuals and groups with problems such as poverty; illness; substance abuse; child, spouse, or elder abuse; lack of financial management skills; emotional and mental health disorders; and inadequate housing. There are five types of certified/licensed social workers: social work associate, licensed social worker, advanced practice social worker, licensed master's social worker, and advanced clinical practice social worker.	The demand for social workers in Texas is expected to increase by 26 percent annually, while opportunities for social workers are projected to grow by 34 percent at the national level.	Training for social workers ranges from an associate degree to a doctoral degree. The bachelor of social work degree (B.S.W.) prepares students for general practice. Students wishing to specialize must earn a master of social work (M.S.W.) degree.	\$20,900 to \$31,400

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NURSE: Advanced Practice Nurse	Advanced practice nurses (APNs) are registered nurses who receive additional academic and clinical training, usually at the master's level, in one of four different health care specialty areas. The four career paths are: nurse practitioner (NP), certified nurse-midwife (CNM), clinical nurse specialist (CNS), and certified registered nurse anesthetist (CRNA). Each area may also contain sub-specialties. Some nurses prefer to work with patients in a particular age group, such as children or older adults. Others may choose to specialize with patients who have a specific condition such as neurological disease, heart problems, pregnancy, diabetes, and emotional problems. Advanced practice nurses often serve as the primary health care provider. They may work independently or in collaboration with members of the health care team to provide care for people who are sick, injured, or hospitalized. Detailed descriptions of each of the four types of advanced practice nurses follow.		All advanced practice nurses must meet the following basic requirements regardless of which type of APN specialty is chosen. All APNs must be licensed registered professional nurses, have completed an Advanced Educational Program of study approved by the Texas State Board of Examiners, have received certification in a specialty area, have received approval for recognition as an Advanced Practice Nurse by the Texas State Board of Nurse Examiners, and have received optional approval for limited prescriptive authority by the Texas State Board of Medical Examiners. A certification examination given by the Texas State Board of Nurse Examiners must be passed in addition to the NCLEX-RN examination given to registered nurses.	Unavailable
NURSE: Certified Nurse-Midwife	A certified nurse-midwife (CNM) is a registered nurse with advanced education and clinical training, usually at the master's level, in midwifery. This additional training classifies the CNM as an advanced practice nurse. A certified nurse-midwife's focus is on women's wellness and consumer choice. Safe, sensitive, confidential personal care is the hallmark of the CNM's unique attention to the special primary care and reproductive needs of women.	A national shortage of qualified nurse-midwives has created excellent work opportunities for certified nurse-midwives that should continue to increase.	Completion of registered nurse training is a prerequisite for entering a midwifery program. There are both certificate and master's-level programs for certified nurse midwives. Certificate programs are open to nurses with associate or bachelor's degrees and usually take nine to 12 months to complete. The master's program requires 16 to 24 months of study, and some require an additional year of clinical experience.	\$40,000 to \$70,000
NURSE: Certified Registered Nurse Anesthetist	Anesthesia is a safe and effective method of alleviating pain during a medical procedure. Certified registered nurse anesthetists (CRNAs) administer spinal (in the spine), intravenous (in the vein), and other anesthetics to patients during surgical procedures, childbirth, and special medical treatments. They are responsible for patient care before, during, and after procedures, monitoring every critical function of the patient's body to ensure that blood pressure, pulse, respiration, pupils, and skin color are all normal. They communicate these vital statistics to the physician(s) during and after the procedure.	The job outlook for certified registered nurse anesthetists is excellent. According to a study by the National Center for Nursing, there is a 13.6 percent shortage of CRNAs nationally. The study projected that there will be a need for 30,000 more CRNAs nationally by the year 2001. The recent acceleration of managed care services will provide additional opportunities and new challenges for these advanced practice nurses.	Applicants for this advanced training must hold a bachelor's degree in nursing or the equivalent, be licensed as a registered nurse, and have at least one year of critical-care nursing experience. Nurse anesthesia education programs consist of 25 to 36 months of graduate work including both classroom and clinical experiences.	\$46,500 to \$56,500
NURSE: Clinical Nurse Specialist	As with other advanced practice nurses, clinical nurse specialists require education beyond the basic nursing curriculum. The role of the clinical nurse specialist (CNS) evolved in response to changes in health care technology that required nurses with highly specialized knowledge and skills. The CNS usually works in a hospital setting. These nursing professionals deliver direct patient care, teach staff and patients, consult with other professionals, and provide leadership and supervision in the workplace. Depending on the specialty they choose, clinical nurse specialists may have an extended scope of practice authority.	Unavailable	As with other advanced practice nurses, clinical nurse specialists require additional education beyond basic nursing education. Programs in the State of Texas are accredited by the Texas State Board of Nurse Examiners or a national accrediting body recognized by the board. The program of study must be at least one academic year in length and may include a formal preceptorship.	\$33,016 to \$50,264

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NURSE: Licensed Vocational Nurse	Licensed vocational nurses (LVNs) help care for ill or injured people and perform health maintenance duties under the direction of physicians, osteopathic physicians, dentists, and registered nurses. Most LVNs provide basic bedside care to patients such as taking vital signs, applying dressings, helping patients with bathing and personal hygiene, and administering prescribed medications. LVNs observe and report on patients' symptoms, reaction to treatment and medication, and progress.	According to the Bureau of Labor Statistics, the demand for licensed vocational nurses in Texas is projected to grow by 24 percent, with 13,600 new job openings from 1993 to 2005.	Vocational nursing training programs usually require one year of study and are offered in community colleges, technical and vocational centers, and hospitals.	\$26,000
NURSE: Nurse Practitioner	A nurse practitioner (NP) is an advanced practice nurse with additional education and clinical training in a health care specialty area. They obtain medical histories, perform physical examinations, monitor patients with chronic diseases, assess and track acute and chronic illnesses, order and interpret lab tests and x-rays as needed, provide health education and disease prevention information to children and adults, and discuss disease prevention strategies with the public. Nurse practitioners also provide prenatal care and family planning. They recommend medications and medical treatments and are allowed by many states to prescribe medications	A nurse practitioner (NP) is an advanced practice nurse with additional education and clinical training in a health care specialty area. They obtain medical histories, perform physical examinations, monitor patients with chronic diseases, assess and track acute and chronic illnesses, order and interpret lab tests and x-rays as needed, provide health education and disease prevention information to children and adults, and discuss disease prevention strategies with the public. Nurse practitioners also provide prenatal care and family planning. They recommend medications and medical treatments and are allowed by many states to prescribe medications	Applicants must have completed a B.S.N. and hold an RN certification prior to applying to a nurse practitioner program. Most NP programs require two to three years of advanced study.	\$37,000
NURSE: Nursing Assistant/Patient Care Assistant	Nursing assistants perform simple, basic patient care under the supervision of registered nurses and licensed vocational nurses. They have a broad range of duties including bathing, walking, and feeding patients; making beds; assisting patients in and out of bed; dressing and shaving patients; and taking vital signs such as blood pressure, pulse, and temperature.	An aging population is increasing the need for nursing assistants.	Many programs require that the applicant be at least 16 years of age and a high school graduate. Training programs provide instruction and supervised clinical experience related to basic patient care, medical terminology, nutrition, taking patient vital signs, interpersonal/communication skills, basic anatomy, safety measures, infection control, assisting with therapies, and employability skills. The patient care assistant program is about 300 hours (15 weeks) long.	\$5.37 to \$7.68 an hour.
NURSE: Registered Nurse	Registered nurses (RNs) observe patients to assess symptoms, reactions to treatment, and progress. They administer medications, perform therapeutic procedures, and instruct patients and their families in proper health care practices. RNs supervise licensed vocational nurses, nursing assistants, patient care assistants, and home health aides. Working in collaboration with physicians and other members of the health care team, RNs develop and implement a plan of care to help the patient achieve optimal health.	The Bureau of Labor Statistics projects the demand for registered nurses in Texas will grow more than 25 percent, with 25,300 new job openings predicted from 1993 to 2005.	Prospective nurses may choose a diploma program, an associate degree in nursing (A.D.N.), the bachelor's of nursing degree (B.S.N.), or a master's degree in nursing (M.S.N.).	\$38,500 to \$48,000

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PHARMACY: Pharmacist	The role of the pharmacist has evolved from one who simply fills prescriptions to that of an active member of the primary health care team. Not only are pharmacists often the first health professional consulted by patients, they are also likely to be the final health care team member with whom the patient consults before taking a prescription drug. Since the pharmacist interacts with patients at such crucial times, they play a vital role in patient education and must be able to communicate effectively with individuals from all social and economic backgrounds.	The demand for skilled pharmacists is increasing because of an increase in human life span, increased incidence of chronic diseases, and the complexity, number, and sophistication of medications and related products. An emphasis on primary and preventive health services and home health care is also increasing the need for more pharmacists.	Pharmacy programs currently offer the bachelor of science (B.S.) or the bachelor of pharmacy (B.Pharm.) degrees and the doctor of pharmacy (Pharm.D.) degree. The trend is for institutions to offer the Pharm.D. as the entry-level degree to the profession	\$37,600 to \$59,500
PHARMACY: Pharmacy Technician	Pharmacy technicians work under the supervision of licensed pharmacists to perform technical and clerical duties in the systematic operation of the pharmacy. Their duties may include but are not limited to: 1) compounding (measuring, weighing, and mixing) medicinal drugs, 2) preparing and labeling medicines, 3) filling bottles and capsules with the correct quantity of medicine, 4) issuing medicines to the customers, 5) maintaining inventory, and 6) keeping patients' medication profiles on specified records or forms.	According to the 1996-1997 Occupational Outlook Handbook, employment opportunities in this field are increasing faster than average.	Pharmacy technology programs teach the knowledge and skills needed to prepare, distribute, label and package drugs, and to keep records. Formalized educational programs range from an eight-month certificate program to a two-year associate degree, which is usually obtained through a community college. Some pharmacy technicians learn their skills on the job. Because pharmacy technicians deal with controlled substances, they must submit to a background check.	\$12,400 to \$19,900
PODIATRY: Podiatrist	Doctors of podiatric medicine (D.P.M.) diagnose and treat foot disorders resulting from tumors, ulcers, fractures, deformities, and skin and nail diseases. These doctors use medical, surgical, mechanical, and electrical methods to treat injuries and disorders. They may treat foot and ankle fractures, sprains, or other injuries. Some D.P.M.s design and develop mechanical devices to correct walking patterns and balance problems.	According to the American Association of Podiatric Medicine, sports injuries and an increasing elderly population have created a great demand for podiatrists. Studies on manpower in the health professions indicate the need to increase the number of practicing podiatrists in the United States by the year 2000.	Applicants to colleges of podiatric medicine should have completed a bachelor's degree and have passed the Medical College Admissions Test (MCAT). Podiatric medicine is a four year course of study, with two years of basic medical sciences and two years of clinical training.	\$35,587 to \$100,000
PUBLIC HEALTH: Biostatistician	Biostatistics is a subdiscipline of statistics. Biostatisticians are extremely important in defining the seriousness of a health problem and proving that treatments are effective. They collaborate with researchers to design studies that may be used to predict the pattern of a specific disease, evaluate a new treatment, assess the safety and effectiveness of medications, and increase knowledge of environmental issues. Biostatisticians participate in research design, data collection, choosing and implementing appropriate methodologies, and in the statistical interpretation of the results.	The need for biostatisticians will increase as new diseases are identified and researched.	Biostatisticians who work in public health generally must have a master's or doctoral degree. It is possible for biostatisticians to have only a bachelor's degree, but they must have gained the necessary health knowledge and experience to work in public health. Course work includes 18 hours or more in the areas of statistics, epidemiology, demography, and geographic information systems, in addition to core public health courses.	\$20,000 to \$50,000

Health Profession	Description of Profession	Job Outlook	Length of Training and Requirements	Salary Range
PUBLIC HEALTH: Environmental Health Specialist	Environmental health specialists protect and preserve the well-being of the environment and human health. Physical environmental problems in Texas include water quality, solid and hazardous water treatment, air pollution, occupational health, noise control, ecology, housing hygiene, and food safety. Environmental health specialists may collect and analyze samples; maintain monitoring equipment; inspect food establishments and swimming pools for cleanliness and safety; and enforce local, state, and federal laws. They inspect recreational areas, nursing homes, schools, food service facilities, child-care facilities, and foster homes, as well as other community and public locations.	With the continuing emphasis on improving the health of our world and environment, the need for environmental health specialists will continue to grow now and through the next century.	Many environmental health specialists receive an associate degree/certificate or a bachelor's degree from an accredited community college program or university.	\$20,000 to \$40,000
PUBLIC HEALTH: Epidemiologist	Epidemiology is considered the basic science of public health. Epidemiologists are the first to identify a disease as it occurs in a population, then they track the disease as it moves through that population. Using statistics, demography, and sound research methods, epidemiologists work to develop methods that prevent or control the spread of new diseases.	With the emergence of new diseases and the reemergence of tuberculosis and other infectious diseases, job trends indicate that epidemiologists will be in demand into the next century.	Epidemiologists who work in public health must have a master's or doctoral degree. Course work will include an average of 15 hours in the field of epidemiology, as well as statistics, demography, research design, operations research, and core public health courses.	\$28,000 to \$35,000
PUBLIC HEALTH: Health Educator/ Promoter	Health educators/promoters provide information and knowledge on health issues and concerns to the public. They address lifestyle and health issues such as nutrition, diabetes, HIV/STDs, substance abuse, and pregnancy. Professionals in this field work with a variety of topics including both lifestyle issues and general health concerns. Health educators/promoters may also participate in research projects throughout the health care industry. The goal of health educators/promoters is to prevent disease and promote health through knowledge and behavior change.	The job outlook is good. The need for health educators/promoters will increase with the shifting focus on preventative health care by the medical and corporate community.	A four-year bachelor's degree in health studies and/or community health is required. Graduate and doctoral degrees are also available within the field.	\$20,000 to \$40,000
RADIOLOGY: Diagnostic Medical Sonographer	Diagnostic medical sonographers, also known as ultrasound technologists, operate ultrasound equipment under the supervision of a doctor to reveal internal anatomical structures and medical conditions that cannot be captured by x-rays. Sonographers use ultrasound equipment to direct high-frequency sound waves into specific areas of a patient's body to produce images of the shape, position, or movement of organs, fluid accumulations, masses, or fetuses. These images may be viewed on a video screen or converted to photographs or printouts and used by physicians to make diagnoses. Sonographers select and set up appropriate equipment for the test, explain the procedure to patients, help patients to assume the correct physical position, and put patients at ease. During the procedures, they observe the sound-wave display screen, adjust equipment to ensure a clear image, and maintain a log of ultrasonic tests.	Unavailable	Programs may be one, two, or four years in length, depending on program design, objectives, and the degree or certificate awarded. Applicants to one-year programs must possess qualifications in a clinically related allied health profession. Applicants to two-year programs must be high school graduates or hold a high school diploma equivalent.	\$22,500 to \$42,500

Health Profession	Description of Profession	Job Outlook	Length of Training and Requirements	Salary Range
RADIOLOGY: Nuclear Medicine Technologist	Working under the supervision of physicians, nuclear medicine technologists (NMTs) perform nuclear medicine procedures to diagnose and treat illness. In diagnosis, NMTs prepare, measure, and give radiopharmaceuticals (radioactive drugs) to patients either by mouth or injection. A radiation-sensitive camera records images of the internal organs and the radioactive tracer coursing through the body, and these images are projected on a video screen. NMTs also analyze the interaction of blood and urine samples with radioactive materials to determine drug and hormone levels. To treat diseases such as hyperthyroidism, NMTs calculate the correct dose of radiopharmaceuticals, then administer it to the patient. Other responsibilities include assisting in performing first aid during procedures, disposing of radioactive waste, maintaining inventory and control of radiopharmaceuticals, and following safety regulations to limit radiation exposure.	The demand for nuclear medicine technologists in Texas is projected to increase by 31 percent, with 250 new jobs created from 1993 to 2005.	The professional portion of the nuclear medicine technologist program is one year in length. Institutions offering accredited programs may provide an integrated educational sequence leading to an associate or bachelor's degree over a period of two or four years.	\$12.57 to \$18.13 an hour.
RADIOLOGY: Radiation Therapy Technologist	Radiation therapy technologists (RTTs) are an important part of the cancer treatment team. Primary responsibilities are 1) assisting in the treatment-planning procedures, including tumor localization and dosimetry (calculation of the amount of radiation that patients are prescribed), 2) preparing and handling radioactive materials used in the treatment, 3) administering radiation therapy by exposing specific areas of the patient's body to prescribed doses of radiation and repositioning the patient when the patient moves during the procedure, 4) monitoring and reporting patients' side effects or adverse reactions, such as vomiting and hair loss, to physicians, and 5) performing quality controls on the equipment. RTTs must maintain radiation safety for patients, clinical personnel, and themselves while carrying out their duties.	A national shortage of radiation therapy technologists has created a strong demand for RTTs. According to the Bureau of Labor Statistics for the federal government, the projected growth for radiologic technologists is 34 percent, with 1,700 new job openings expected between 1993 and 2005.	Programs may be one, two, or four years in length, depending on program design, objectives, and the degree or certificate awarded.	\$13.61 to \$20.31 an hour.
SPECIAL TECHNOLOGY: Electroneurodiagnostic Technologist/ Electroencephalographic Technologist	An electroencephalographic (EEG) machine records the electrical activity of the brain and nervous system. Electroneurodiagnostic (END) technologists and electroencephalographic (EEG) technologists use an electroencephalograph (EEG) machine to record the electrical impulses transmitted by the brain and nervous system. The range of tests performed by an electroneurodiagnostic (END) technologist is broader than that performed by an electroencephalographic (EEG) technologist but includes many of the same tests.	Job prospects are expected to be good through the year 2005 as an increased number of neurological tests are performed. Most jobs will be found in hospitals, but growth will be fastest in neurologists' offices and clinics.	Many large hospitals and clinics offer on-the-job training for electroneurodiagnostic and electroencephalographic technologists. However, formal one- and two-year certificate or associate degree programs exist in other states. The current trend in Texas hospitals is to train allied health personnel as ENDs and EEGs.	\$7.76 per hour.

Health Profession	Description of Profession	Job Outlook	Length of Training and Requirements	Salary Range
SPECIAL TECHNOLOGY: Cardiovascular Technologist	Registered cardiovascular technologists (RCTs) perform invasive and noninvasive tests at the request of a physician to diagnose and provide therapy for heart disorders. Cardiac catheterization is one example of an invasive diagnostic test. Noninvasive tests include echocardiography and vascular ultrasound Doppler imaging. Phonocardiography, vector-cardiography, Holter monitoring, and stress tests are other examples of noninvasive tests conducted by RCTs. Other duties of a cardiovascular technologist may include reviewing and recording medical history and maintaining equipment.	Since there are only a limited number of training programs for cardiovascular technologists, demand for these professionals is strong, and the job outlook is excellent.	Training programs average two years, although they may range from one to four years depending on previous experience and the area of specialization chosen. The curriculum includes core courses in human physiology, invasive and noninvasive cardiology techniques, and clinical practicum.	\$21,000 to \$33,000
VISION CARE: Optician	Opticians make prescription eyeglasses and contact lenses according to the specifications of optometrists or ophthalmologists. Dispensing opticians help patients select the size, color, and shape of their frames, then measure the patient's face to decide exactly where the lenses should be placed. After the eyeglasses have been made, the dispensing optician measures and adjusts the glasses for proper fit. Optical laboratory technicians generally work in laboratories that fill orders from dispensing opticians. In general, they grind, polish, measure, surface, finish, inspect, mount the lenses into frames, and make sure that the lenses and frames fit properly.	By the year 2000, there will be an estimated 7,200 positions for opticians in Texas, with yearly job openings estimated at 300. The job outlook is good because as the population ages, the need for corrective lenses will increase.	High school graduates may complete either a two-year associate degree program at a community college or a one-year certificate program to become an optician. The curriculum includes academic course work and a clinical practicum. An individual may also complete a three-year apprenticeship to become a licensed optician.	\$23,900 to \$29,200
VISION CARE: Optometrist	Doctors of optometry provide most of the primary vision care that people need. They examine, diagnose, treat, and manage eye diseases and disorders. Optometrists may administer drugs for diagnostic purposes and, in many states, prescribe drugs to treat eye diseases. Traditionally, they prescribe eye-glasses, contact lenses, vision therapy, and low-vision aids. They may also use special tests and tools to identify and evaluate vision defects that are symptomatic of other diseases.	Texas employment is estimated to be at 2,300 by the year 2000, with 110 job openings annually. Demand for optometric services is expected to rise as awareness of the importance of vision care increases and the population increases in age and income.	Students must earn a bachelor's degree and complete a four-year accredited program at a college of optometry. All applicants must take the Optometric Admissions Test (OAT) to be considered for admission to a college of optometry.	\$40,000 to \$80,000

Reference: East Texas AHEC, www.etxahec.org/index.htm

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